



Speech Language Therapy in the community during pandemic: report of experiences of undergraduate students

Fonoaudiologia na comunidade em período de pandemia: relato de experiências de estudantes de graduação

Terapia del lenguaje en la comunidad en periodo de pandemia: informe de experiencias de estudiantes de pregrado

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Abstract

Introduction: Covid-19 pandemic has required constant adaptations and planning by educational institutions to preserve academic activities. In-person classes were replaced by remote courses through Information and Communication Technologies (ICTs). Since practical activities (such as academic internships) are essential for students in the Health Areas, they also migrated to remote classes. Thus, asynchronous models of service provision were suggested and regulated during this pandemic period. **Objective:** reporting the experience of interns at the Speech Language and Audiology Course at the Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo during the development of remote activities aimed at students and elderly users of Primary Health Care services during the

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pandemic. **Methods:** This is a descriptive study of the experience report type. **Results:** Actions that could be performed at home were created, divided into physical, speech and memory activities, all with a playful approach, providing opportunities for interaction and stimulation/improvement of the aforementioned skills. For these students, these experiences were fundamental to the development of this new methodology, stimulating their creativity. **Conclusion:** Remote activities aimed at children and elderly allowed these populations to be supported during social restriction. The opportunity to establish contact with the target audience and the possibility of keeping up interaction with the community was extremely important for the students. There is a chance of spreading these actions to any group, if they are adapted according to the group age.

Keywords: Primary health care; Learning; Education; COVID-19.

Resumo

Introdução: A pandemia de Covid-19 tem exigido adaptações e planejamentos constantes das instituições de ensino para a manutenção das atividades acadêmicas. Houve a substituição das disciplinas presenciais por remotas, através das Tecnologias de Informação e Comunicação (TICs). Como as atividades de cunho prático (como estágios acadêmicos) são fundamentais para os estudantes da Saúde, elas também migraram para a forma remota. Diante disso, modelos assíncronos de fornecimento de serviço foram sugeridos e regulamentados nesse período pandêmico. **Objetivo:** Relatar a experiência de estagiários do curso de Fonoaudiologia da Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo na aplicação de atividades remotas direcionadas a escolares e idosos usuários de serviços de Atenção Primária à Saúde, durante a pandemia. **Métodos:** Trata-se de um estudo descritivo, do tipo relato de experiência. **Resultados:** Foram elaboradas ações passíveis de realização no ambiente domiciliar, segmentadas em atividades físicas, de linguagem e de memória, todas com abordagem lúdica, fornecendo oportunidades de interação e estimulação/aprimoramento dessas habilidades. Para os estudantes, as experiências foram fundamentais para o desenvolvimento dessa nova metodologia, estimulando sua criatividade. **Conclusão:** As atividades remotas dirigidas às crianças e idosos permitiram que essas populações fossem amparadas durante a restrição social. O estabelecimento de contato com o público-alvo e a possibilidade de interação com a comunidade foi muito importante para os estudantes. É possível a replicação das ações propostas a qualquer grupo, desde que sejam adequadas à faixa etária.

Palavras-chave: Atenção primária à saúde; Aprendizagem; Educação; COVID-19.

Resumen

Introducción: La pandemia de Covid-19 ha requerido constantes adaptaciones y planificación de las instituciones educativas para mantener las actividades académicas. Se sustituyeron los cursos presenciales por los remotos, mediante las Tecnologías de la Información y las Comunicaciones (TIC). Como las actividades prácticas (como las prácticas académicas) son fundamentales para los estudiantes de Salud, también ellas han migrado a la forma remota. Por lo tanto, se sugirieron y reglamentaron modelos de prestación de servicios asincrónicos en este período pandémico. **Objetivo:** Informar la experiencia de los pasantes del Curso de Terapia del Lenguaje de la Facultad de Medicina de Ribeirão Preto da Universidade de São Paulo en la aplicación de actividades a distancia dirigidas a estudiantes y usuarios ancianos de los servicios de Atención Primaria durante la pandemia. **Métodos:** este es un estudio descriptivo, del tipo relato de experiencia. **Resultados:** Se desarrollaron acciones que se pueden realizar en el ámbito del hogar, segmentadas en actividades físicas, de lenguaje y de memoria, todas con un enfoque lúdico, brindando oportunidades de interacción y estimulación/mejora de las habilidades mencionadas. Para los pasantes, las experiencias fueron fundamentales para el desarrollo de esta nueva metodología, estimulando su creatividad. **Conclusión:** Las actividades remotas dirigidas a niños y ancianos permitieron apoyar a estas poblaciones durante la restricción social. Establecer contacto con el público objetivo y la posibilidad de interacción con la comunidad fue muy importante para los estudiantes. Es posible replicar las acciones propuestas a cualquier grupo, siempre que sean adaptadas para el grupo de edad.

Palabras clave: Atención primaria de salud; Aprendizaje; Educación; COVID-19.



Introduction

The COVID-19 pandemic brought significant changes to the way students learn at different levels of education. With the period of social isolation, it was necessary to establish strategies for the maintenance of academic activities¹, in order to reduce as much as possible the impacts resulting from the absence of face-to-face contact between students and teachers².

The Brazilian Ministry of Education³ authorized, on an exceptional basis, the substitution of in-person courses by remote ones, mediated by Information and Communication Technologies (ICTs). To this end, a portion of the workload allotted for student education was developed remotely⁴, both synchronously and asynchronously⁵, in view of the need to ensure the continuity of the students' education.

In the Speech Language and Audiology undergraduate course, besides participating in the theoretical subjects that are part of the curriculum, the students develop practical activities (internships), in hospitals, day-care centers, schools, therapeutic residences, healthcare centers, as well as in other contexts, depending on the Political and Pedagogical Project (PPP) of each teaching institution. During the pandemic, some practices were resumed with the help of ICTs, and were supported by the Federal Council of Speech Language and Audiology⁶, which regulated the use of these technologies. The models of service delivery in speech language therapy include the following forms: synchronous, asynchronous, hybrid, and automatic.

There is still a long way to go before ICTs become part of everyday life in Brazilian education and healthcare, despite their intensification in current contexts. Thus, reports regarding the experience of the active application of this new conduct are indispensable for the concept's consolidation nationwide.

The aim of this study is to report the experience of Speech Language Therapy interns at the Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo, Brazil, with respect to the application of remote activities directed to schoolchildren and elderly users of Primary Care services during the Covid-19 pandemic.

Methods

This is a descriptive study, of the experience-report type, developed during the pandemic period. The study was based on the reports of five undergraduate students in the third year of the Speech Language and Audiology course at the Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo, Brazil. The students developed practical distance-learning activities, asynchronously, in a community care internship. All activities were carried out between September 2020 and February 2021.

Electronic tools were used (i.e., audio and video, recorded on smartphones, notebooks and tablets; editing software such as iMovie, Movie Maker, Power Point, and Canva; as well as the Google Meet platform) for the creation of activities aimed at the target audience of the internship: 35 students from a Child Education Center (ages between two and five years) and 20 elderly users from two Family Health Centers.

To send the activities to participants, the digital application WhatsApp was used, which also served to establish contact with the groups and receive feedback. For the elderly persons who did not have electronic equipment or Internet access, adaptations were made and the material was delivered in person, respecting all health safety parameters due to the Covid-19 pandemic.

Results and discussion

Activities with schoolchildren

Play is an excellent way to promote children's learning and development, and tends to directly influence the construction of identity and autonomy⁷. It is through play that children develop reasoning, imagination, memory, attention, motor skills, and social interaction.

As highlighted by Bontempo⁸, play is a characteristic phase in the development of the child's intelligence, which is consolidated by assimilation and experience, i.e., it originates in a child's imagining a situation, in a make-believe scenario. Through these games, the child creates strategies to deal with day-to-day situations.

Thinking about the development of the schoolchildren's abilities, the students from the Speech Language and Audiology course created activities



that could be conducted indoors. As a way to facilitate access, they were designed taking into account the use of household objects and resources. The activities were segmented into: physical activities

(to promote motor development); and language and memory activities (to promote cognitive development, logical thinking, and language). These activities can be seen in Chart 1.

Chart 1. Activities developed for the students

Activity	Group	Objective	Strategy
Each pot has its lid game	Children ages 2.0 to 3.0 years	Stimulate the improvement of motor skills, general notions of shape and size; improvement of logical thinking skills.	The parents and/or caregivers were instructed to leave several jars and lids scattered in a certain space (for example, the living room floor). The child should find the lid to each pot and put it on accordingly. It was suggested to use pots of different sizes, shapes, and colors. The number of pots would depend on the age of each child: older children could have a larger number of pots at their disposal.
Walking on a line/bowling game	Children ages 2.0 to 3.0 years	Stimulate the improvement of motor skills, balance, and of vocabulary and a notion of vowels.	The parents and/or caregivers were instructed to create a line path on the floor, using tape, for example. The child was instructed to walk on this path, keeping his feet on the line. At the end of the path, the child had to throw a small ball (made of crumpled paper or some other material) at the bottles, which were the bowling pins (e.g., milk bottles). On each bottle there was a vowel written. The parents and/or caregivers would take the bottles, show the child the letter, and repeat it aloud (the idea was to create a visual and auditory memory of the vowels); then tell the child: "with this letter we have the words XXX" (e.g. with the letter A we have the words apple, airplane, etc.).
Buying at the Market game	Children ages 2.0 to 3.0 years	Stimulate a notion of value of objects and respect for financial limits; stimulate the development of civic responsibility, respect for rules, language (lexicon), speech, and social interactions.	Parents and/or caregivers were instructed to cut colored paper into the shape of money and to draw, together with the child, pictures to symbolize values (this paper symbolized money). A shoebox was suggested to represent the checkout till of a supermarket. Using objects and food that were available at home, the parents and/or caregivers were instructed to create a small store. The child, who was a customer there, could go shopping with his or her money. Parents were advised to use market brochures and to cut out the pictures of the foods and their respective prices. When the child went to the cashier, the adult would help him or her choose the money according to the value in the picture.
Online memory game	Children ages 3.0 to 4.0 years	To stimulate the expansion of vocabulary, to favor visual memory and discernment, and to motivate quick thinking.	Online memory games to be sent to parents were developed through a free website. The games had four categories: 1. animals; 2. fruits; 3. sounds, and 4. meals. The number of pairs to be found would increase as they progressed through these categories. The links to the memory games were sent to the parents, along with an explanatory video made using Google Meet. The video explained the benefits of the activities for child development and guided parents on how to access the games.
Blow the worm to the finish line game	Children age 5.0 years	Stimulate speech development by strengthening facial muscles, stimulating vocabulary and phonological awareness.	Initially, the parents and/or caregivers were instructed to cut small worm-shaped figures from strips of paper. Using a straw, the children were instructed to blow the little paper worms to a finish line, which would be drawn on the floor. Each worm had a syllable /pa/ /sa/ /ta/ written or glued on its body. As soon as a worm reached the finish line, the participant would read the syllable. E.g. /pa/. Next, all the participants would recite words that begin with this syllable, such as pan, path, paddle, pack.



Due to social distancing imposed by the pandemic, the physical space used for schooling and physical and leisure activities was limited to the home. One of the consequences of this was a decrease in physical activity, and more time spent playing and using screens by children⁹.

Kim¹⁰ argues that children tend to learn better through play, and concentrate more easily when they can be active through hands-on activities. Because of this, it is important to devise strategies that have the potential to stimulate children's development, especially during times of isolation when social contact is exponentially reduced.

Focusing on the promotion of children's physical activities, actions were proposed to stimulate motor skills, such as games like "walking on a line and bowling" and "putting the right lid on each of several pots", in addition to increasing vocabulary and logical reasoning. The proposal of multifunctional activities implicates the relevance of children's physical activity to reduce the sedentariness that can cause future health complications¹¹.

Activities with groups of elderly individuals

The aging population is undoubtedly a great achievement of mankind. According to the World Health Organization (WHO), the average age of the population has increased due to technological and medical advances, a reduction in the mortality rate, as well as advances related to health care¹². However, aging is not always accompanied by a good quality of life. There are many elderly

people who have several chronic diseases, such as diabetes, hypertension, cholesterol, as well as neurodegenerative diseases that are more common in senescence, such as Parkinson's disease, Alzheimer's disease, among others, which can affect cognitive functions¹³.

It is also worth mentioning that some dysfunctions occur with advancing age, such as presbyphonia (vocal alteration), presbycusis (hearing alteration), presbyopia (visual alteration), and diverse joint problems (arthritis, arthrosis, etc.). These conditions can, without a doubt, directly interfere in the communication and quality of life of these individuals¹⁴.

Researchers have sought to understand the relationship between cognitive decline and aging, in order to develop intervention strategies to improve quality of life. According to Santana and collaborators¹⁵, memory workshops are classified as favorable strategies for elderly groups, both in terms of cognition and socialization. Through them, functional improvement in daily life is the objective, making use, for example, of playful dynamics and cognitive training.

In other words, it can be said that memory workshops contribute to improving the mnemonic functions of the elderly, and offer new opportunities for interaction among the participants who are often socially isolated.

The students from the Speech Language and Audiology course also created activities aimed at the elderly group; these activities can be seen in Chart 2.

Chart 2. Activities developed for groups of elderly individuals

Activity	Objective	Strategy
Association & action	To stimulate participants' short-term memory and attention by presenting visual/auditory stimuli in association with various fruits.	Visual and auditory stimuli were presented to participants by video. Each stimulus was associated with a fruit (e.g., clapping hands was a movement associated with a picture of a banana, snapping fingers with that of a strawberry). A series of stimuli was presented in random order. Initially, the stimuli were few and presented with large time intervals in between. As the participants became more familiar with the situation, new stimuli were presented, and the speed between presentations was decreased (thus ensuring a scaled degree of difficulty). At the end of each presentation a time was allotted for the participants to verbalize, to themselves, the sequence of the stimuli (about 10 seconds). After this waiting time, the sequence was repeated for the participant to check his/her answer. To conclude the activity, three questions were asked: What were the first two fruits presented? What was the last fruit presented? Which was the largest fruit?



Activity	Objective	Strategy
Magic Square	Stimulate higher mental functions that go beyond memory, such as: logical reasoning, executive functions, attention, and motor coordination.	Cards were made based on the "Magic Square" game, but instead of the traditional form, in which numbers fill each square, figures of different fruits (grapes, strawberries, watermelon, and bananas) were used. All the material was printed and given to the participants (the rules were explained through an interactive video). The material was composed of six game boards (one 2x2, one 3x3, and four 4x4), two template boards, a blank board (so the elderly could develop their own game), and 16 cut-out fruits (four banana, four strawberry, four grape, and four watermelon figures).
Storytelling - 1	To stimulate participants' short-term memory and attention by presenting auditory stimuli associated with an animal-themed story.	The elderly were presented with a story recorded only in audio, so the input was exclusively auditory. The story had the theme "animals" and was taken from a site of curiosities on the subject. As the storyline unfolded, several questions were asked, causing the seniors to have to constantly search for withheld information. After the question was asked, there was an 8-second pause (the elderly were expected to answer within this time), followed by the disclosure of the answer, thus continuing the plot. The questions were repeated several times throughout the story, so that the information could be obtained/retrieved more effectively (e.g. "Pets are raised by people as sources of entertainment and companionship. As a negative point, they require a lot of attention and care; but as a positive point, they bring a lot of joy into people's lives." Question, "What were the negative points of having pets?").
Storytelling - 2	Stimulate attention, and auditory and visual working memory, through auditory and visual stimuli present in a narrated and illustrated story with the theme "food".	A story was presented through a narrated video. It was composed of images presented concomitantly with key words listed during the telling of the story. The story was divided into paragraphs; at the end of each paragraph questions were asked. After each question, there was a 10-second pause for the elderly individuals to answer for themselves, and at the end of the pause, the answer was offered, sometimes along with motivational comments such as "very good" and "congratulations". The story related a Mr. Antonio and his relationship with food. Here is an excerpt: "Mr. Antonio, a resident of Lambari, a small town in the interior of the state of Minas Gerais, makes a living selling cheeses and homemade candies. His customers' favorite sweets are guava paste, peanut brittle, peanuts, and caramelized sweetened milk." For memory stimulation, the questions were made more difficult as the story was told. For visual working memory, images of foods were presented, and the subject was asked the sequence of foods in the order presented and in reverse order; questions related to foods beyond the content of the story (such as: "what is a food that is not derived from animals?"); and images were presented in order to identify which food was not mentioned in the story. For auditory working memory, questions were asked about the content of each paragraph, such as "What was the first food we had to memorize?"
Shall we memorize some sounds?	Stimulate short-term memory (working memory) through sounds, based on a "kitchen utensils" theme.	A video featured sounds of kitchen utensils and/or noises that evoked something that happens in the kitchen. The sounds of boiling water, a kettle, a pressure cooker, a blender, cutlery clinking, the toasting of wine glasses, and frying (recorded on a smartphone) were presented. In the first part of the video all the sounds that would be presented throughout the activity were played so that the elderly listener would become familiar with them, since the goal was to stimulate auditory memory and not sound recognition. Initially four sounds were presented, each lasting 10 seconds, played in order and without repetition. The elderly individual had to verbalize the sequence presented, and had 15 seconds to do the activity. The answers were then presented with the sounds in the correct order. The number of sounds was gradually increased.

As pointed out by Gomes and collaborators¹⁶, memory training through activities that are meaningful to the elderly person's daily living can promote better quality of life and delay the onset of cognitive deficits. Therefore, such training can be considered as a protective factor for this group.

It is noteworthy that the study by Zimmer and collaborators¹⁷, which made a comparison between groups of memory training, concluded that the memory training of the elderly, mediated by tablet devices, showed similar results to the training performed in a conventional manner (without the use of technology). The authors stated that one of the most significant findings was that the tablet intervention group was very enthusiastic about using electronic resources and was highly motivated.

The experiences presented in this paper were fundamental to the development and improvement of the skills of the students, who had to deal with adapting to new situations and create strategies to achieve the proposed objectives in the community internship during the Covid-19 pandemic.

Final considerations

The remote activities designed and made available to the children and elderly groups allowed these populations to be supported during the social restriction imposed by the Covid-19 pandemic. Even remotely and asynchronously, child development was stimulated through training, as was the memory of elderly individuals.

Furthermore, the activities carried out were important for the undergraduate students, as they could continue their internships in the community - albeit remotely - and establish contact with the target population.

It is hoped that this report will contribute to the demonstration that it is possible to stimulate child development, and memory of the elderly, at a distance through programmed activities. It also serves to justify and demonstrate the importance of continuity of these activities, which can be made available to any target population, so long as they are age-appropriate, with defined objectives and strategies.

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